



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,344	01/02/2002	Wim De Pauw	OR920010309US2	2510

7590

05/05/2005

Ryan, Mason & Lewis, LLP
Suite 205
1300 Post Road
Fairfield, CT 06430

EXAMINER

MITCHELL, JASON D

ART UNIT

PAPER NUMBER

2193

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/040,344	Applicant(s) PAUW ET AL.	
	Examiner Jason Mitchell	Art Unit 2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This application claims priority to provisional application 60/278,538 filed on 03/23/2001. At Applicant's request claims 1-2, 17-18, 24-25, 29-30 and 32-35 are amended. Claims 1-35 are pending in this case.

Drawings

Applicant's replacement sheets are accepted and consequently the objections to the drawings are withdrawn.

Claim Rejections - 35 USC § 112

Applicant's amendments were sufficient to overcome the 112 rejections of claims 17 and 29. Consequently the rejections have been withdrawn.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-2, 17-18, 20-23 and 28-30 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims recite a method for analyzing a software system comprising, collecting data, providing that data for analysis, modifying that data, as well as various methods of analyzing that data; but fail to technologically embody the invention in a tangible medium (i.e. computer readable medium), and consequently fail to produce a tangible or useful result. Therefore the claims recite only nonstatutory subject matter.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1-35 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,832,270 to Laffra et al. (Laffra).**

Regarding Claim 1: Laffra discloses a method for analyzing behavior of a software system (col. 1, lines 61-63 'visualizing the internal workings of object-oriented software'), comprising: collecting details associated with a program task associated with said software system (col. 1, lines 61-63 'the internal workings of object-oriented software') based on a specification associated with said program task (col. 5, lines 43-48 'This specification is done using the visualization script rules'), wherein said specification contains one or more conditions to initiate a trace of said program task (col. 6, lines 12-15 'If the hook notifies creation or deletion of an instance, the visualization script 285 will be used to generate or remove a visual representation of the instance'); and providing said collected details for analysis (col. 1, lines 61-63 'visualizing the internal workings').

Regarding Claim 2: The rejection of claim 1 is incorporated; further Laffra discloses a duration of said program task is defined (Fig. 3, step 330 'create or delete visual repr.') by said one or more conditions associated with a state of said software system (col. 2, lines 8-10 'an object instance being created, an object instance being destroyed').

Regarding Claim 3: The rejection of claim 2 is incorporated; further Laffra discloses said one or more conditions includes an entry or exit of at least one specified method (col. 2, lines 8-11 'a method being entered or a method being exited').

Regarding Claim 4: The rejection of claim 2 is incorporated; further Laffra discloses said one or more conditions includes a creation or deletion of at least one specified object (col. 2, lines 8-10 'an object instance being created, an object instance being destroyed').

Regarding Claim 5: The rejection of claim 2 is incorporated; further Laffra discloses said one or more conditions includes an invocation of at least one specified object (col. 6, lines 66-67 'the creation of a new object instance').

Regarding Claim 6: The rejection of claim 2 is incorporated; further Laffra discloses said one or more conditions includes a passing of at least one specified object or scalar value as an argument, return value or field value (col. 9, lines 16-20 'Syntactical elements allow the specification of one or more method triggers' and col. 9, lines 6-10 'Constraints').

Laffra discloses 'Constraints' as comparisons (col. 9, lines 9-10 'operator is a comparison operator') which can compare variables to constants or other variables (col. 9, lines 7-10 'local variables ... or instance variables'), and can be checked at various

Art Unit: 2193

points including, in this case, a method call (col. 9, lines 16-20 'Syntactical elements allow the specification of one or more method triggers').

Regarding Claim 7: The rejection of claim 2 is incorporated; further Laffra discloses said one or more conditions includes at least one specified sequence of method invocations (col. 7, lines 41-43 'count the number of times a given method is executed ... when a certain threshold has been reached').

Regarding Claim 8: The rejection of claim 2 is incorporated; further Laffra discloses said one or more conditions includes at least one specified resource exceeding at least one specified threshold (col. 9, lines 6-10 'Constraints take the form of two operands and one operator. The operands are ... instance variables').

Regarding Claim 9: The rejection of claim 1 is incorporated; further Laffra discloses said collected details include an existence or sequence of specified method invocations (col. 7, lines 41-43 'count the number of times a given method is executed ... when a certain threshold has been reached').

Regarding Claim 10: The rejection of claim 1 is incorporated; further Laffra discloses said collected details include an existence or sequence of specified object creations and deletions (col. 2, lines 8-10 'an object instance being created, an object instance being destroyed').

Regarding Claim 11: The rejection of claim 1 is incorporated; further Laffra discloses said collected details include an existence or sequence of specified class loading and unloading (col. 2, lines 8-10 'an object instance being created, an object instance being destroyed')

Art Unit: 2193

Regarding Claim 12: The rejection of claim 1 is incorporated; further Laffra discloses said collected details include values of specified arguments to invocations of specified methods (col. 60-65 'one or more instance variables').

Regarding Claim 13: The rejection of claim 1 is incorporated; further Laffra discloses said collected details include values of specified return values from invocations of specified methods (col. 2, lines 9-11 'a method being exited' and col. 9, lines 6-10 'Constraints').

Regarding Claim 14: The rejection of claim 1 is incorporated; further Laffra discloses said collected details include values of specified field values for invoked objects or field values for passed arguments (col. 60-65 'one or more instance variables').

Regarding Claim 15: The rejection of claim 1 is incorporated; further Laffra discloses the step of collecting said details for at least one specified number of task instances (col. 7, lines 10-11 'each time an object of the class employee is created').

Regarding Claim 16: The rejection of claim 1 is incorporated; further Laffra discloses the step of collecting said details for at least one (1) specified number of threads (col. 1, lines 61-63 'visualizing the internal workings of object-oriented software').

Regarding Claim 17: The rejection of claim 1 is incorporated; further Laffra discloses the step of dynamically modifying said specification associated with said program task associated with said analysis (col. 2, lines 17-19 'modify the visualization, without recompiling or relinking the application programs') in an iterative process (Fig. 3, step 380 'check all visual repr. Use script').

Regarding Claim 18: The rejection of claim 1 is incorporated; further Laffra discloses the step of dynamically modifying said specification to identify details to collect (col. 2, lines 17-19 'modify the visualization, without recompiling or relinking the application programs') in an iterative process (Fig. 3, step 380 'check all visual repr. Use script').

Regarding Claim 19: The rejection of claim 1 is incorporated; further Laffra discloses the step of connecting to a running version of said software system (claim 7. 'rules can be changed independent of the ... execution of the application'). By adding rules to an empty 'visualization script' one can be said to be connecting to a running version of said software system.

Regarding Claim 20: The rejection of claim 1 is incorporated; further Laffra discloses the step of visually analyzing said collected details (col. 1 lines 61-63 'visualizing').

Regarding Claim 21: The rejection of claim 1 is incorporated; further Laffra discloses the step of visually analyzing said collected details (col. 1 lines 61-63 'visualizing') for a plurality of instances of said program task (col. 7, lines 10-11 'each time an object of the class employee is created').

Regarding Claim 22: The rejection of claim 1 is incorporated; further Laffra discloses the step of quantitatively analyzing said collected details (col. 7, lines 7-8 'the height of the box is a function of the salary of the employee').

Regarding Claim 23: The rejection of claim 1 is incorporated; further Laffra discloses the step of quantitatively analyzing said collected details (col. 7, lines 7-8 'the height of the box is a function of the salary of the employee') for a plurality of instances of said program task (col. 7, lines 10-11 'each time an object of the class employee is created').

Regarding Claim 24: Laffra discloses a method for tracing details associated with a program task executing in a software system (col. 1, lines 61-63 'visualizing the internal workings of object-oriented software'), comprising: monitoring said software system to identify said program task (col. 7, lines 66-67 'notifies the creation of a new object instance') based on a specification associated with said program task (col. 5, lines 43-48 'This specification is done using the visualization script rules'), wherein said specification contains one or more conditions to initiate a trace of said program task (col. 6, lines 12-15 'If the hook notifies creation or deletion of an instance, ... generate or remove a visual representation of the instance'); and providing trace details associated with said program task (col. 7, lines 14-18 'the salary of the employee gets updated').

Regarding Claim 25: The rejection of claim 24 is incorporated; further Laffra discloses a duration of said program task is defined by said one or more conditions associated with a state of said software system (col. 2, lines 8-10 'an object instance being created, an object instance being destroyed').

Regarding Claim 26: The rejection of claim 25 is incorporated; further Laffra discloses said one or more conditions is selected from the group consisting essentially of an entry or exit of at least one specified method (col. 2, lines 8-11 'a method being entered or a method being exited'), a creation or deletion of at least one specified object (col. 2, lines 8-10 'an object instance being created, an object instance being destroyed'), an invocation of at least one specified object (col. 2, lines 8-10 'an object instance being created, an object instance being destroyed'), a passing of at least one specified object

Art Unit: 2193

or scalar value as an argument, return value or field value (col. 9, lines Syntactical elements allow the specification of one or more method triggers' and col. 9, lines 6-10 'Constraints'), at least one specified sequence of method invocations (col. 7, lines 41-43 'count the number of times a given method is executed ... when a certain threshold has been reached'), and at least one specified resource exceeding at least one specified threshold (col. 9, lines 6-10 'Constraints take the form of two operands and one operator. The operands are ... instance variables').

Regarding Claim 27: The rejection of claim 24 is incorporated; further Laffra discloses said collected details include at least one of the following: an existence or sequence of specified method invocations col. 7, lines 41-43 'count the number of times a given method is executed ... when a certain threshold has been reached'), an existence or sequence of specified object creations and deletions (col. 2, lines 8-10 'an object instance being created, an object instance being destroyed'), an existence or sequence of specified class loading and unloading (col. 2, lines 8-10 'an object instance being created, an object instance being destroyed'), values of specified arguments to invocations of specified methods (col. 9, lines Syntactical elements allow the specification of one or more method triggers' and col. 9, lines 6-10 'Constraints'); values of specified return values from invocations of specified methods (col. 2, lines 9-11 'a method being exited' and col. 9, lines 6-10 'Constraints'), and values of specified field values for invoked objects or field values for passed arguments (col. 60-65 'one or more instance variables').

Regarding Claim 28: The rejection of claim 24 is incorporated; further Laffra discloses the step of collecting said details for at least one specified number of task instances (col. 7, lines 10-11 'each time an object of the class employee is created') and collecting details for at least one (1) specified number of threads (col. 1, lines 61-63 'visualizing the internal workings of object-oriented software').

Regarding Claim 29: The rejection of claim 24 is incorporated; further Laffra discloses the step of dynamically modifying a specification associated with said program task specification associated with said analysis (col. 2, lines 17-19 'modify the visualization, with out recompiling or relinking the application programs') in an iterative process (Fig. 3, step 380 'check all visual repr. Use script').

Regarding Claim 30: The rejection of claim 24 is incorporated; further Laffra discloses the step of dynamically modifying said specification to identify which details to collect (col. 2, lines 17-19 'modify the visualization, with out recompiling or relinking the application programs') in an iterative process (Fig. 3, step 380 'check all visual repr. Use script').

Regarding Claim 31: The rejection of claim 24 is incorporated; further Laffra discloses the step of connecting to a running version of said software system (claim 7. 'rules can be changed independent of the ... execution of the application').

Regarding Claims 32 and 34: Laffra discloses a system for analyzing behavior of a software system, comprising: a memory that stores computer-readable code (Fig. 1, Application Program 102); and a processor operatively coupled to said memory, said processor configured to implement said computer-readable code (Fig. 1, CPU 116),

said computer-readable code configured to: collect details associated with a program task associated with said software system based on a specification associated with said program task (col. 5, lines 43-48 'This specification is done using the visualization script rules'), wherein said specification contains one or more conditions to initiate a trace of said program task (col. 6, lines 12-15 'If the hook notifies creation or deletion of an instance, ... generate or remove a visual representation of the instance'), and provide said collected details for analysis (col. 1, lines 61-63 'visualizing the internal workings of object-oriented software').

Regarding Claims 33 and 35: Laffra discloses a system for tracing details associated with a program task executing in a software system, comprising: a memory that stores computer-readable code (Fig. 1, Application Program 102); and a processor operatively coupled to said memory, said processor configured to implement said computer-readable code (Fig. 1, CPU 116), said computer-readable code configured to: monitor said software system to identify said program task based on a specification associated with said program task (col. 5, lines 43-48 'This specification is done using the visualization script rules'), wherein said specification contains one or more conditions to initiate a trace of said program task (col. 6, lines 12-15 'If the hook notifies creation or deletion of an instance, ... generate or remove a visual representation of the instance'); and trace details associated with said program task (col. 1, lines 61-63 'visualizing the internal workings of object-oriented software').

Response to Arguments

4. Applicant's arguments, see pg. 9, 15-25, filed 4/3/02, with respect to Examiners assertion regarding applicants Information Disclosure Statement have been fully considered and are persuasive. The assertion has been withdrawn with apologies.

5. Applicant's arguments, see pg. 9, line 26-pg. 10, line 4, filed 4/3/02, with respect to Examiners objection to the drawings have been fully considered and are persuasive. The objections have been withdrawn.

6. Applicant's arguments filed 4/3/02 regarding the 101 rejection of claims 1-2, 17-18, 20-25 and 28-30 have been fully considered but they are not persuasive.

On pg. 10, lines 13-21 Applicant states:

Applicants note that the Supreme Court has stated that the "[t]ransformation and reduction of an article 'to a different state or thing' is the clue to patentability of a process claim" *Gottshalk v. Benson*, 409 U.S. 63, 70, 175 U.S.P.Q. (BNA) 676 (1972). In otherwords, claims that require some kind of transformation of subject matter, which has been held to include intangible subject matter, such as data or signals, that are representative of or constitute physical activity or objects have been held to comply with Section 101.

Examiner respectfully disagrees. It is Examiners position that the instant claims are only directed to abstract ideas (i.e. details associated with a program task) and therefore do not contain an 'article' to be reduced 'to a different state or thing'. To support this position Examiner points to a passage from *In re Warmerdam* "from the standpoint of Section 101, a physical measurement step is indistinguishable from the data gathering

Art Unit: 2193

step which we held in *In re Grams*, ... was insufficient, standing alone, to impart patentability to a claim." Accordingly Examiner finds that the instant claims recite only the gathering and manipulation of abstract ideas and consequently recite no more than a mathematical algorithm, therefore the rejection of claims 1-2, 17-18 and 20-23 are upheld.

However, upon further consideration it is found that claim 24, through recitation of 'a program task executing in a software system' necessarily includes a tangible medium (i.e. processor and memory) and therefore is directed to more than abstract ideas.

Accordingly the 101 rejections to independent claim 24 and dependent claims 25, and 28-30 are withdrawn.

7. Applicant's arguments, see pg. 10, line 26-30, filed 4/3/02, with respect to Examiners rejection of claims 33 and 35 under 35 USC 101 have been fully considered and are persuasive. The rejections have been withdrawn.

8. Applicant's arguments, see pg. 11, line 1-6, filed 4/3/02, with respect to Examiners rejection of claims 17 and 29 under 35 USC 112 have been fully considered and are persuasive. The rejections have been withdrawn.

9. Applicant's arguments with respect to claims 1-35 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

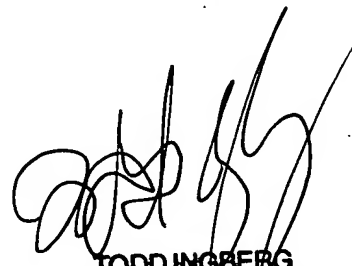
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Mitchell whose telephone number is (571) 272-3728. The examiner can normally be reached on Monday-Thursday and alternate Fridays 7:30-5:00.

Art Unit: 2193

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason Mitchell
4/6/05



TODD INGBERG
PRIMARY EXAMINER